

Blue

Work Order ID 55779

February 1, 2010 10:10:50 AM

Page 1

Item ID: D206-667-103BL

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00

Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan: *PL*

Date: *10-2-01*

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D206-667-143

C

100

0.00



DC

Document Control

DOCUMENT CONTROL

Memo

0.00

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

8/10/02/25

HJ for LL 10/02/25

110

0.00



Packaging

Packaging

Pick Kit

Packaging

Memo

0.00

(IX)

MB

10-02-03

120

0.00



CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

Memo

0.00

Bend tube as per Dwg D206-667-143 using CNC bender program

(IX)

MB

10-02-03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

February 1, 2010 10:10:50 AM

Page 2

Item ID: D206-667-103BL

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00

Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

2) 8/10/2013

(4)

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

February 1, 2010 10:10:50 AM

Page 3

Item ID: D206-667-103BL

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00

Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start

QC: Date: SPC (Y/N): Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

0.00



Crosstubes

Crosstubes

Memo

0.00

1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.

5-Drill pilot holes as per Dwg D206-667-143. Drill only the top (2) holes.

6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-141.

8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.

9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 Inside of Cuff (Do not engrave on outside of tube)

10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143

MB 10-0204

-HVM 10-2-9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

February 1, 2010 10:10:50 AM



Page 4

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

1 - - Ann M 10-2-9

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

8/10/02/09

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/10/02/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

February 1, 2010 10:10:50 AM



Page 5

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 Outsource2 Outsource process - NDT	Outsource process - NDT per QSI038 4.1 Memo CROSSTUBES	0.00 0.00							
190 Packaging Packaging	Packaging Memo Ensure copy of NDT results attached to work order.	0.00 0.00							
200 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							

PO 11364
10-2-14

Puffin

10 02 17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

February 1, 2010 10:10:50 AM



Page 6

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

210

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube grey as per QSI 005 4.2

2-Paint outside crosstube *Primer: 110918*

Delfleet Blue B 113171

clear Delfleet B 110896

PRIME:

Start Time: 10:00

Finish Time: 11:00

PAINT:

Start Time: 3:00

Finish Time: 4:00

MA 10 02 17 1

220

QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

BT 10-02-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

February 1, 2010 10:10:50 AM

Page 7

Item ID: D206-667-103BL

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00

Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230



Crosstubes

Crosstubes

0.00

0.00

Memo

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (2) Aft holes should be facing up.
A/R Magnobond 6398 : 112417 exp 01/2011

2-Install supports and clamps as per Dwg D206-667-143. Torque clamps to 80-100 in lb

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint.

m/l 10 02 18 ①

240



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

Memo

S. 10/02/13

~~10-02-13~~

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

Page 8

February 1, 2010 10:10:50 AM

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

10-2-25 SF

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

8.10.02/25

④

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-667-103

Location: _____

PPP Rev: _____

bu D

10-2-26 SF

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55779

February 1, 2010 10:10:50 AM



Page 9

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/03/02

R 10-2-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:10:58 AM

Page 1

Work Order ID: 55779

Parent Item: D206-667-103BL

Parent Item Name: Crosstube Fwd, Blue


Comments: IIP RevA: new issue DD .09.11.23 verified by:EC

Start Date: 2/02/10

Required Date: 2/19/10

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D206-667-103TRN		Manufactured	No			110	Each	2.0000	1.0000			
 Crosstube Turning DetailL												

MB 10-02-03

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
FG	2	
52829	1	
52830	1	

MB 10-02-03

D2873-043		Manufactured	No			230	Each	47.0000	2.0000			
 Nut Plate Assembly												

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	47	
45370	2	
45422	1	
50002	4	
50871	20	
53966	20	

MB 10 02 23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:10:58 AM

Work Order ID: 55779



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IIP RevA: new issue DD .09.11.23 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2873-045		Manufactured	No			230	Each	65.0000	2.0000			
Nut Plate Assembly												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

65

45210

3

50001

22

53967

20

53968

20

D2891-1

Manufactured No

230

Each

67.0000

2.0000



2.25 Support

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

67

40336

1

43880

18

46159

20

50952

20

53347

8

Blue

ml 10 02 18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:10:58 AM

Work Order ID: 55779



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IIP RevA: new issue DD .09.11.23 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3595-063-395		Manufactured	No			230	Each	28.0000	4.0000			
RUBBER CUSHION												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	28	
<u>44667</u>	28	

m/ 10 02 18

cut (4)0.063" X 3.95"

MS20601-AD4W8

Purchased

No

230

Each

372.0000

14.0000



RIVET

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	372	
108521	200	
<u>112203</u>	172	

m/ 10/02/23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:10:58 AM

Work Order ID: 55779



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IIP RevA: new issue DD .09.11.23 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21920-20		Purchased	No			230	Each	115.3000	4.0000			
Clamp (per MIL-DTL-8783C)												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	115.3	
103478	2	
106484	12	
109269	9.3	
110536	10	
<u>112307</u>	32	
112624	39	
112793	11	

ml 10 02 18

AN5-30A

Purchased

No

250

Each

71.0000

4.0000



BOLT

10-2-25 P

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	71	
<u>110467</u>	21	
112933	50	

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:10:58 AM

Work Order ID: 55779

Parent Item: D206-667-103BL

Parent Item Name: Crosstube Fwd, Blue

Comments: IIP RevA: new issue DD .09.11.23 verified by:EC

Start Date: 2/02/10

Required Date: 2/19/10

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN5-32A Bolt		Purchased	No			250	Each	172.0000	4.0000			

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	172	
106242	3	
106519	4	
110363	17	
112933	48	
113121	100	

AN5-7A
Bolt

Purchased No 250 Each 174.0000 10.0000

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	157	
110625	7	
113149	100	
113226	50	
Main Warehouse		
t	17	
112829	17	

QSI 017 SL
NRS1149005631

AN960JD516

Purchased No 250 Each 0.0000 18.0000

Washer

February 1, 2010 10:10:58 AM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:10:58 AM

Work Order ID: 55779



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue


Start Date: 2/02/10

Required Date: 2/19/10

Comments: IIP RevA: new issue DD .09.11.23 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN970-4  Washer		Purchased	No			250	Each	262.0000	12.0000		10-2-25	

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST	262	
104885	3	
107242	3	
107715	1	
108077	2	
108377	19	
111724	3	
112082	1	
112794	9	
112991	221	

MS21042L5



Nut

Purchased

No

250

Each

533.0000 4.0000



10-2-25

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST	533	
110382	10	
111636	1	
112314	22	
113523	300	
113537	200	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

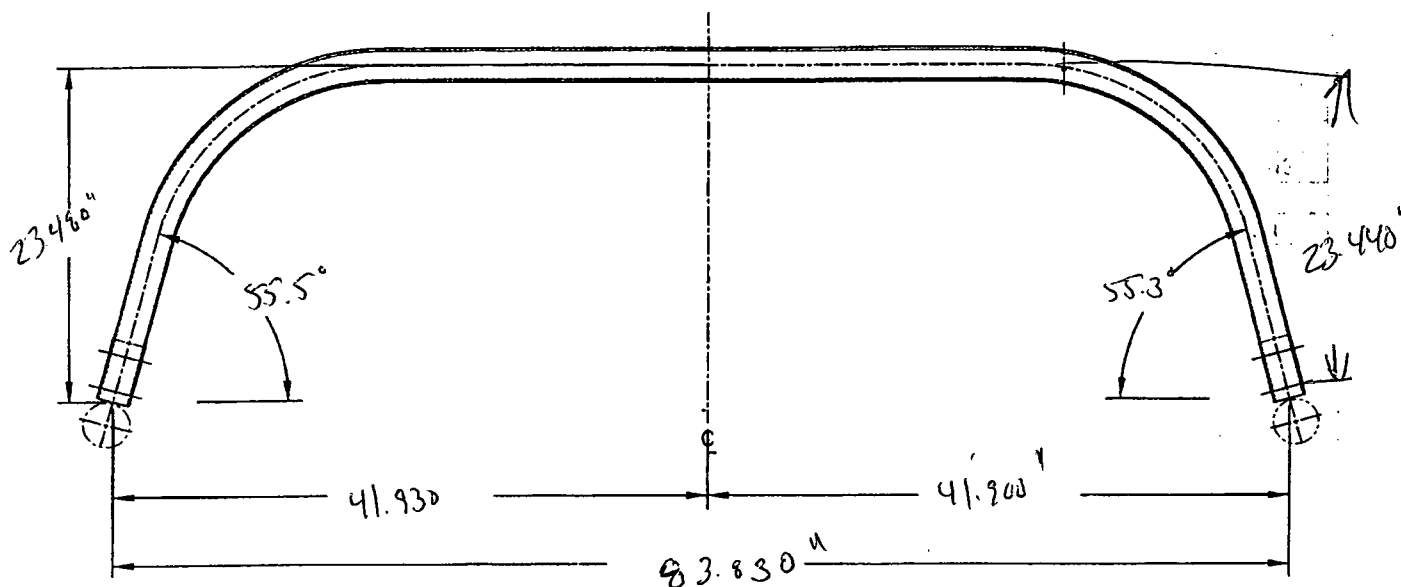
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	55779
Description: Crosstube High Fwd (206L)	Part Number:	D206-667-103
Inspection Dwg: D206-667-143 Rev: C		Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10



Comments

QC15 Inspection	S
Date	10/02/13

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	

Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

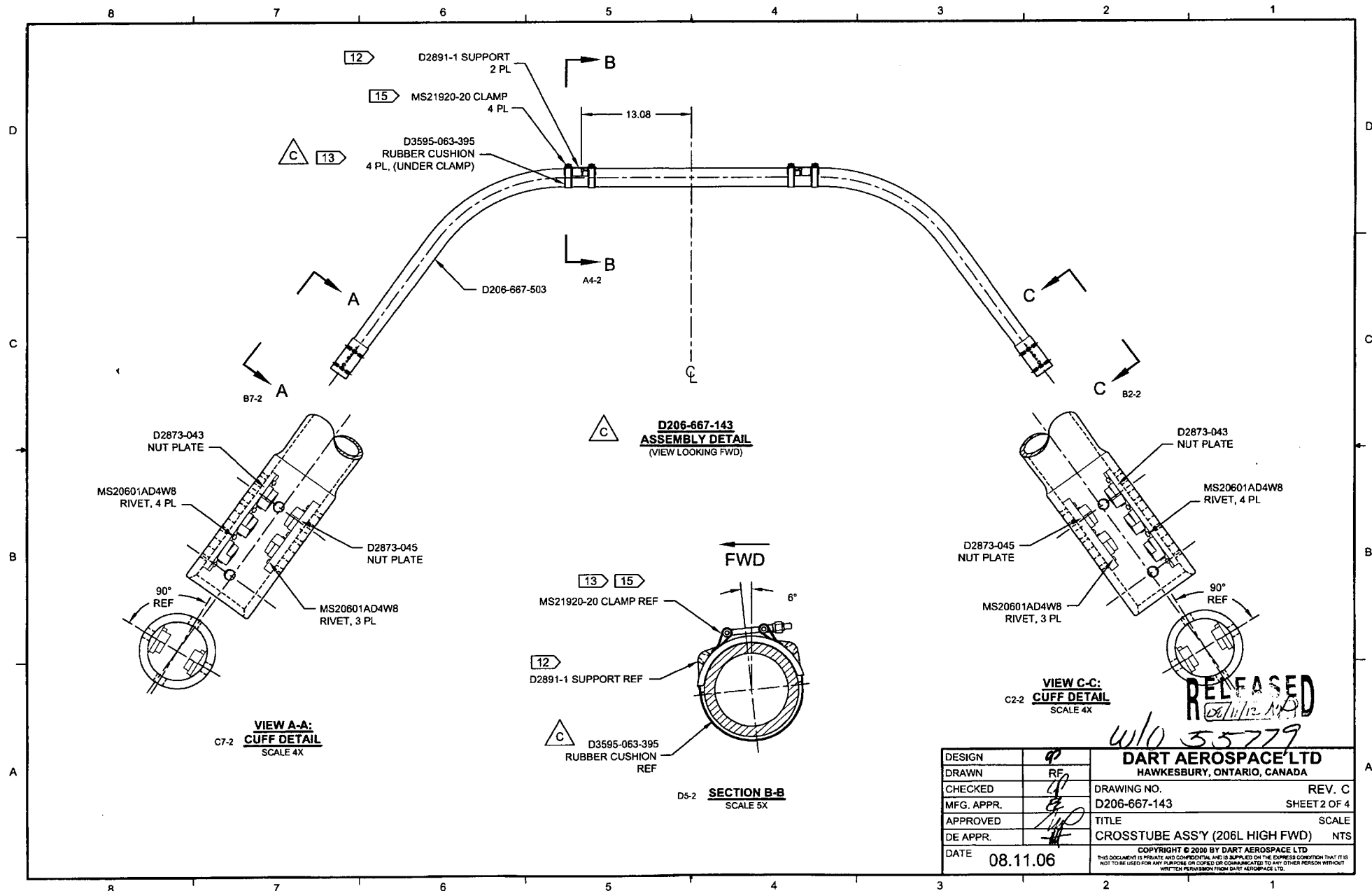
GENERAL NOTES:

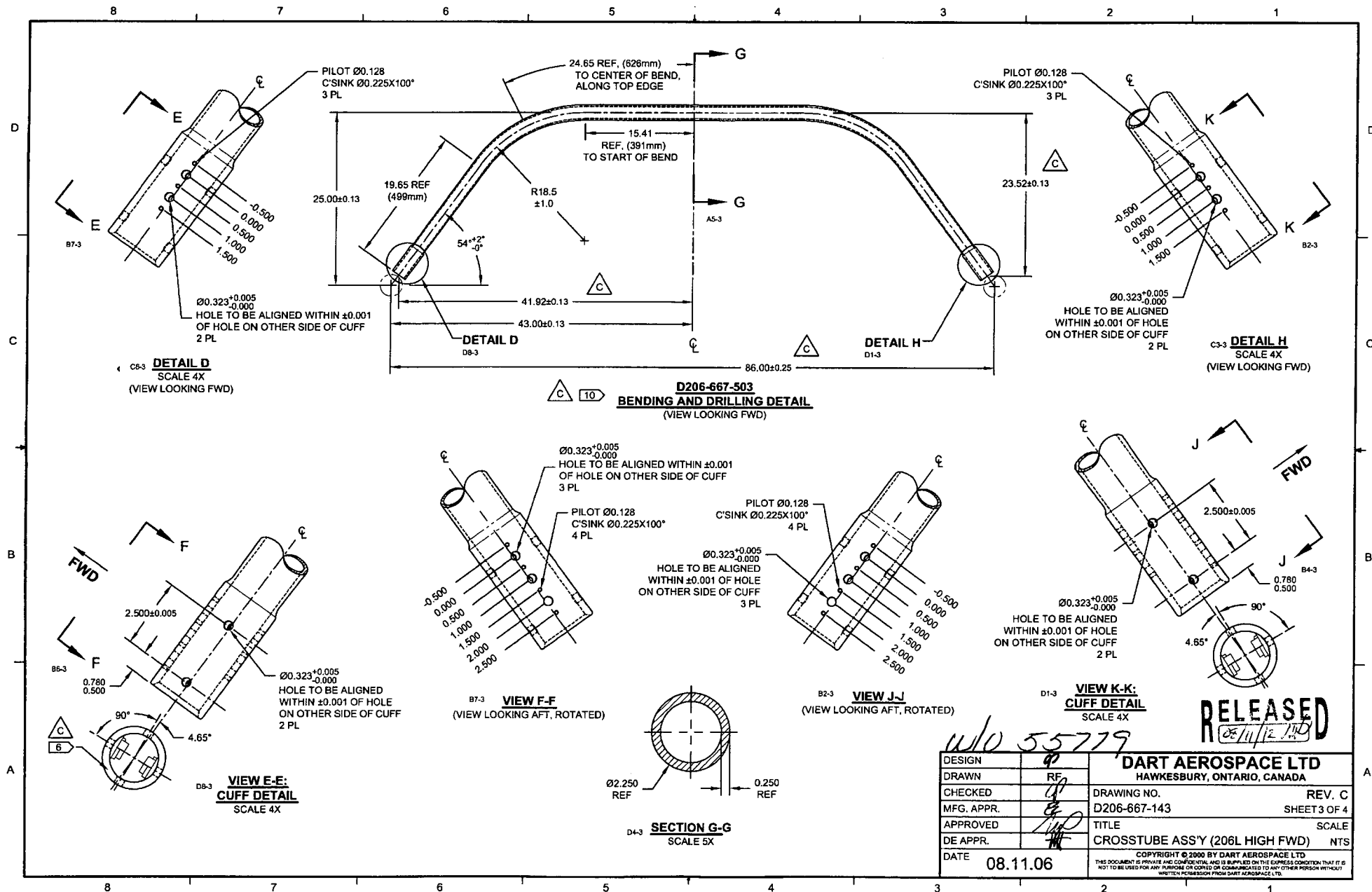
- MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 15.5 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

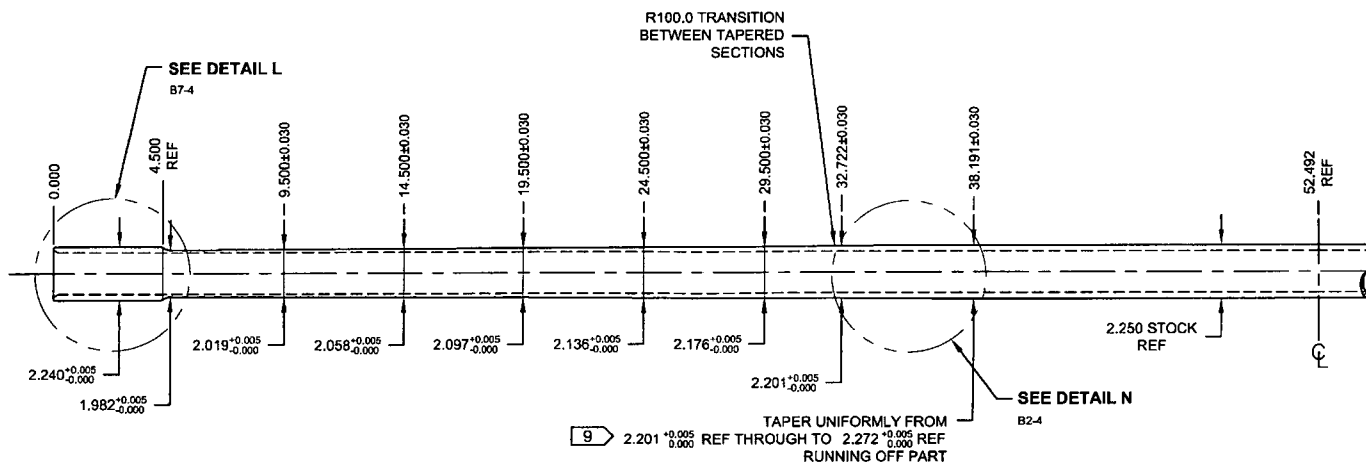
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 55779
B1102-01

RELEASED

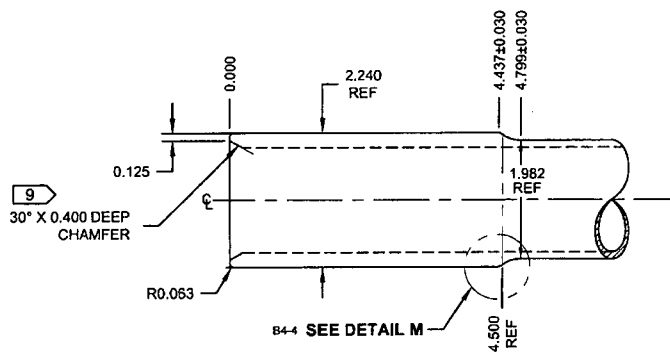
C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-143	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	



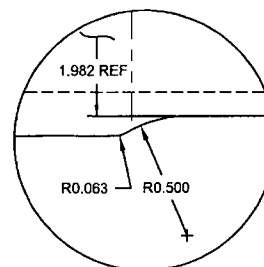




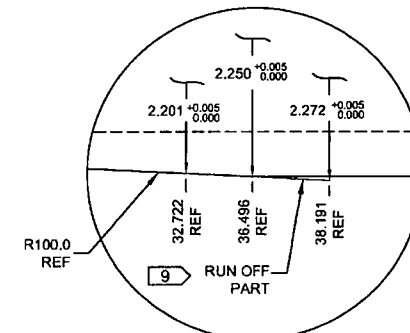
C TURNING DETAIL



**DETAIL L:
CROSSTUBE CUFF**
D7-4
NOT TO SCALE



**DETAIL M:
CUFF TRANSITION**
A6-4
NOT TO SCALE



**DETAIL N:
TAPER RUN-OFF**
C4-4
NOT TO SCALE

RELEASED
08/11/06

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. C
MFG. APPR.	9	D206-667-143	SHEET 4 OF 4
APPROVED	9	TITLE	SCALE
DE APPR.	9	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

REFERENCE ONLY

5.0 PARTS LIST

8

Item	Qty -011	Qty -013	Qty -015	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X									D206-667-011	SPACER BLOCK KIT
		X								D206-667-013	NUT PLATE KIT (-101/-103/-105/-203/-205)
			X							D206-667-015	NUT PLATE KIT (-201)
				X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
					X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
						X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
							X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
								X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
									X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1				1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2					1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3						1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4							1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5								1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6									1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10				*2	*2	*2		*2		D2891-1	SUPPORT
11							*2			D2892-1	SUPPORT
12									*1	D2894-1	SUPPORT
13				*2	*2	*2		*2		D2856-400-694	ABRASION STRIP
14							*2		*2	D2856-400-773	ABRASION STRIP
15									*1	D2856-600-851	ABRASION STRIP
16				*4	*4	*4		*4		MS21920-20	CLAMP
17							*4		*4	MS21920-22	CLAMP
18									*2	MS21920-24	CLAMP
19				4	4	4		4		AN5-32A	BOLT
20							4		4	AN5-34A	BOLT
21				4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22				8	8	8	8	8	8	AN960JD516	WASHER
23									*2	D3190-1	CHAFING SHIELD
30	8									AN4-6A	BOLT
31	8									AN4-7A	BOLT
32	16									AN960JD416	WASHER
33	2									D3193-041	SPACER BLOCK ASSEMBLY
40		2		*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41		2		*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42			2		2					D2872-043	NUT PLATE
43			2		2					D2872-045	NUT PLATE
44		10		10		10				AN5-7A	BOLT
45		10	10		10		10	10	10	AN5-10A	BOLT
46		4	4	4	10	4		4		AN5-30A	BOLT
47		4					4		4	AN5-32A	BOLT
48		18	18	10	12	10	10	10	10	AN960JD516	WASHER
49		4	4		6					MS21042L5	NUT (OR MS21042-5)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/241/143/243, & D407-667-145/245 ASSEMBLIES ABOVE

• COPYRIGHT © 2001 BY DART AEROSPACE LTD. •

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

Revision: C

Date: 05.07.26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D206-667 REV. C
AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D206-667 REV. 2

REF CANADIAN STC: SH01-5
REF FAA STC: SR01304NY
REF EASA STC: EASA.IM.R.S.01179

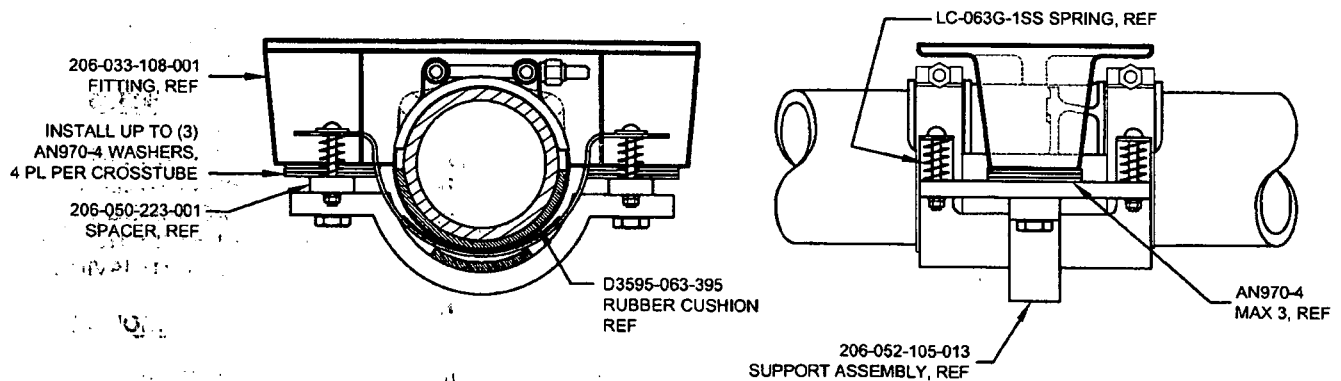
REFERENCE ONLY

PROBLEM:

FOR D206-667-103 CROSSTUBES (206L FWD) AT CHG 003 AND SUBSEQUENT (SEE DSI 9415) PROPER INSTALLATION OF THE OEM SUPPORT ASSEMBLIES MAY BE IMPOSSIBLE DUE TO THE ADDITIONAL THICKNESS OF THE DART D3595-063-395 RUBBER CUSHIONS. THE 206-052-105-013 SUPPORT ASSEMBLY (OR EQUIVALENT) MAY SIT TOO HIGH RELATIVE TO THE 206-033-108-001 FITTING, CAUSING THE LC-063G-1SS SPRING (OR EQUIVALENT) TO BE OVERLY COMPRESSED.

SOLUTION:

IT IS ACCEPTABLE TO LOWER THE SUPPORT ASSEMBLY BY INSTALLING UP TO QTY (3) AN970-4 WASHERS BETWEEN THE 206-033-108-001 FITTING (OR EQUIVALENT) AND THE 206-050-223-001 SPACER (OR EQUIVALENT). SEE FIGURE BELOW FOR REFERENCE.



CROSSTUBE SECTION: SUPPORT DETAIL

PARTS LIST:

THE FOLLOWING PARTS HAVE BEEN INCLUDED WITH D206-667-103 CROSSTUBES AT CHG 004 AND SUBSEQUENT

ITEM	Qty -103	PART NUMBER	DESCRIPTION
60	12	AN970-4	WASHER

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 08.12.17
CERT. NO.: SH01-5
ISSUE NO.: 3

A	NEW ISSUE	CP	08.12.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>92</i>	DART AEROSPACE LTD	
DRAWN	<i>92</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>PH</i>	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9439	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206L FWD XTUBE SUPPORT MOD.	NTS
DATE	08.12.17	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 15318

PAGE 1 OF 1

N

DATE 4 FEB 2010
LINDA / CHARTER
1777 ABBEY ST.
HANKSBURY IN, KGA 1K7

DATE FEB 11-2010 TIME AM ☒ PM ☐
ACUREN JOB NO. 198-1C-0651
POWOW No. 11364
WORK LOCATION SAC
ACCEPTANCE STD. ASTM 1417 REV./DATE 2007

XAMINED

F.P.I. ON CROSS TUBES
8 P.S

SCRIPTION

PROCEDURE NO. LT-5002 REV./DATETECHNIQUE NO. LT-TECH 2 REV./DATEMATERIAL ALUMINUM THICKNESS

WET FLUORESCENT LIQUID PENETRANT INSPECTION
CARRIED OUT 100% EXTERNAL.

DETAILS

<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED
RAND <u>ALASWAFLEX</u>		BLACK LIGHT S/N <u>10459</u>	<input checked="" type="checkbox"/> OUTPUT > 1000 μ W/cm ²	<input type="checkbox"/> AMBIENT < 2 fc
NT <u>2.0</u>	MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT	<input type="checkbox"/> OUTPUT > 100 fc @ SURFACE	
NT REMOVER <u>1.2</u>	MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABINE</u>		
ER <u>SKD 5.2</u>	MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N <u>1098866</u>	CAL DUE DATE <u>MAY 7-2010</u>	
ER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY				

URFACE

CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input checked="" type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input type="checkbox"/> CLEAN BARE METAL
TEMPERATURE <input type="checkbox"/> < -4°C/20°F <input type="checkbox"/> -4°C/20°F TO 10°C/50°F <input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F

FS- (☐ METRIC ☐ IMPERIAL)

CROSS TUBE W.C. 55759 ✓
CROSS TUBE W.C. 55760 ✓
CROSS TUBE W.C. 55761 ✓
CROSS TUBE W.C. 55762 ✓
CROSS TUBE W.C. 55791 ✓
CROSS TUBE W.C. 55782 ✓
CROSS TUBE W.C. 55134 ✓
CROSS TUBE W.C. 55135 ✓

ALL ITEMS EXAMINED ON
THIS REPORT HAVE BEEN
ACCEPTED TO STANDARD.

10 02 17

Services

Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as a warranty or representation of any kind. Acuren Group Inc. is not assuming any responsibility for the engineering, manufacturing, repair and use decisions as a result of the information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Care

Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

TECHNICALS

REPRESENTATIVE <u>Jan Tiley</u>	SIGNATURE <u>[Signature]</u>	DTR # <u>E27362</u>
CLIENT (SIGNATURE): <u>[Signature]</u>	REPORT REVIEWED BY:	NAME INITIALS
(PRINT): <u>Mike Locksley</u>		
1. TECHNICIAN CGSB LEVEL <u>2</u> SNT LEVEL <u>2</u> CGSB REG. NO. <u>6606</u>	2. TECHNICIAN CGSB LEVEL SNT LEVEL CGSB REG. NO.	

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY